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82

CLAYTON TOWN LIMITS

CLAYTON

BEGIN PROJECT

END PROJECT

-CLAYTON TOWN LIMITS

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

R-3825B

T.I.P. NO.

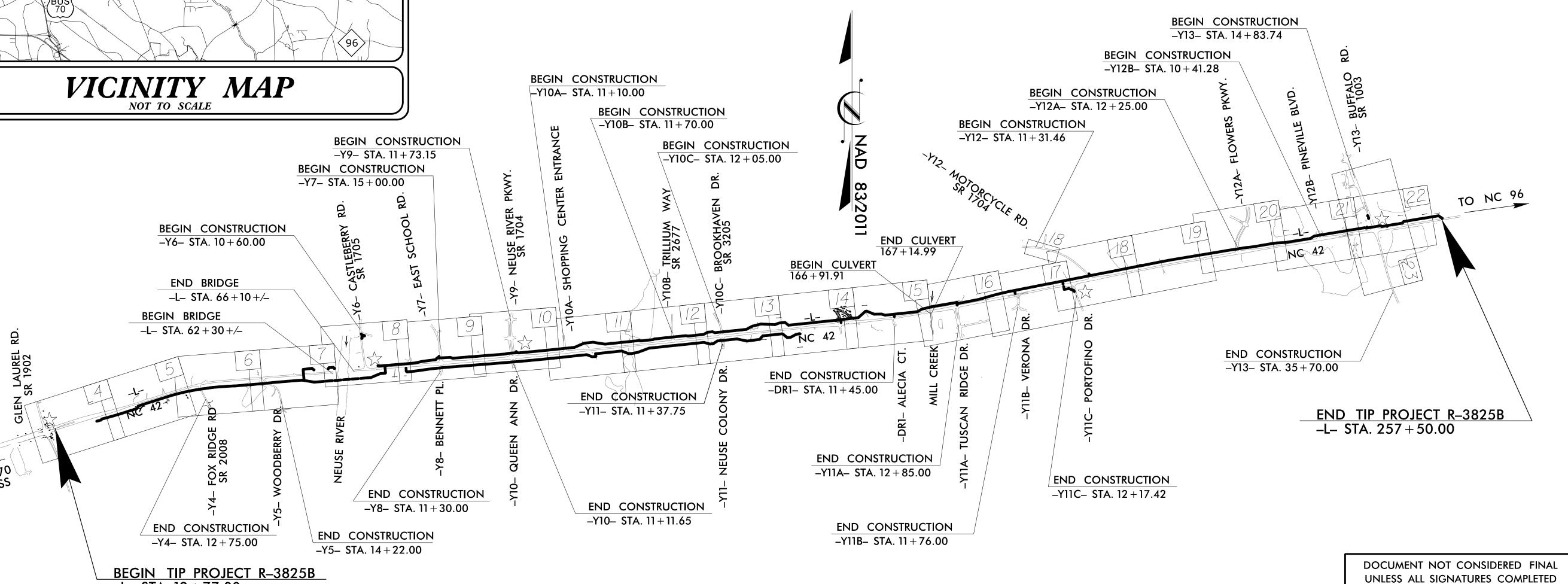
UC-1

SHEET NO.

UTILITY CONSTRUCTION PLANS JOHNSTON COUNTY

LOCATION: NC 42 FROM SR 1902 (GLEN LAUREL RD) TO SR 1003 (BUFFALO RD)

TYPE OF WORK: WATER AND SEWER RELOCATIONS



DATE:

FINAL UTILITY CONST. PLANS

SUBMITTAL: AUGUST 9, 2018

GRAPHIC SCALES **PLANS** PROFILE (HORIZONTAL) PROFILE (VERTICAL)

INDEX OF SHEETS

DESCRIPTION: SHEET NO.:

-L- STA. 12 + 77.00

TITLE SHEET *UC–2* LEGEND OF SYMBOLS GENERAL NOTES

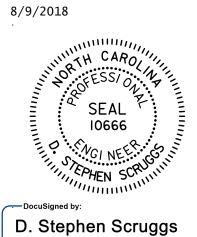
UC-3A THRU UC-3F CONSTRUCTION DETAILS UTILITY CONST. PLAN SHEETS UC-4 THRU UC-23 UC-24 THRU UC-37 UTILITY CONST. PROFILES

WATER AND SEWER OWNERS ON PROJECT

(A) WATER: JOHNSTON COUNTY UTILITIES (B) SANITARY SEWER: JOHNSTON COUNTY UTILITIES, TOWN OF CLAYTON PREPARED IN THE OFFICE OF:

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC. 701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607 919-854-6200 919-854-6259 (fax) F - 0342



SEAL

DIVISION OF HIGHWAYS UTILITIES UNIT 1555 MAIL SERVICES CENTER RALEIGH NC 27699–1555 PHONE (919) 707–6690 FAX (919) 250-4151

Nabil Hamdan

UTILITIES REGIONAL ENGINEER Ashley B. Cox, Jr, LG UTILITIES ENGINEER

Kyle Pleasant UTILITIES AREA COORDINATOR Dayton Martin UTILITIES COORDINATOR

Steve Scruggs, PE UTILITIES PROJECT ENGINEER

ROJECT REFERENCE	NO.	SHEET NO.	•
R-3825B		UC-2	

PROPOSED WATER SYMBOLS

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

Water Line (Sized as Shown)	12" WL
11½ Degree Bend	·····++
22½ Degree Bend	++
45 Degree Bend	+×
90 Degree Bend ·····	
Plug ·····	·····
Tee ·····	
Cross	•••••••••••••••••••••••••••••••••••••••
Reducer	······•
Gate Valve	GV
Butterfly Valve	BV
Tapping Valve	TGV
Line Stop	LS ••••••••••••••••••••••••••••••••••••
Line Stop with Bypass	LS/BP
Blow Off ·····	<u>BO</u>
Fire Hydrant	PFH ♣
Relocate Fire Hydrant	RFH ♣
Remove Fire Hydrant	REM FH
Water Meter	PWM
Relocate Water Meter	RWM
Remove Water Meter	REM WM
Water Pump Station	PS(W)
RPZ Backflow Preventer	PRPZ
DCV Backflow Preventer	PBFP
Relocate RPZ Backflow Prevent	er
Relocate DCV Backflow Prevent	er
PROPOSED	SEWER SYMBOLS
Gravity Sewer Line	12" \$\$
(Sized as Shown) Force Main Sewer Line	
(Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	r5(35)

Power Pole ·····	δ
Telephone Pole ······	o -
Joint Use Pole	& -
Telephone Pedestal ······	© PED
Utility Line by Others (Type as Shown)	
Trenchless Installation	→12" TL INSTALL
Encasement by Open Cut	24" ENCAS BY OC
Encasement	24" ENCASEMENT

Thrust Block ·····	I
Air Release Valve	AR •
Utility Vault	UV
Concrete Pier ······	СР
Steel Pier	SP
Plan Note	NOTE
Pay Item Note	PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole	*Underground Power Line
Telephone Pole ·····	*Underground Telephone Cable ·····
Joint Use Pole	*Underground Telephone Conduit
Utility Pole	*Underground Fiber Optics Telephone Cable
Utility Pole with Base	*Underground TV Cable······
H-Frame Pole	*Underground Fiber Optics TV Cable ······
Power Transmission Line Tower	*Underground Gas Pipeline ······
Water Manhole	Aboveground Gas Pipeline
Power Manhole	*Underground Water Line ·····
Telephone Manhole	Aboveground Water Line
Sanitary Sewer Manhole	*Underground Gravity Sanitary Sewer Line
Hand Hole for Cable	Aboveground Gravity Sanitary Sewer Line
Power Transformer	*Underground SS Forced Main Line
Telephone Pedestal	Underground Unknown Utility Line
CATV Pedestal	SUE Test Hole ·····
Gas Valve	Water Meter
Gas Meter	Water Valve ······
Located Miscellaneous Utility Object	Fire Hydrant ······
Abandoned According to Utility Records	Sanitary Sewer Cleanout ······
End of Information	

*For Existing Utilities
Utility Line Drawn from Record (Type as Shown)
Designated Utility Line (Type as Shown)

\$\$\$\$\$\$YSTIME\$\$\$\$ \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$DGN\$\$\$\$\$\$\$\$\$\$\$\$

REV: 2/1/201

UTILITY CONSTRUCTION

PROJECT SPECIFIC NOTES:

Prepared in the Office of:

AECO/

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 2760
919-854-6200 919-854-6259 (fax)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO. SHEET NO.

R-3825B

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

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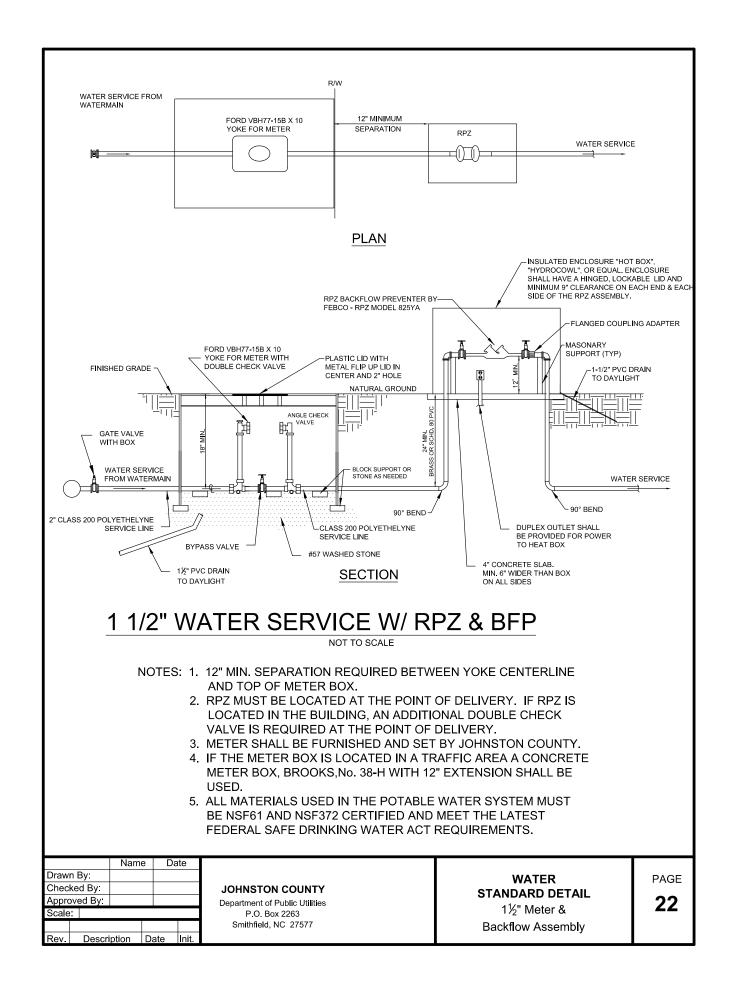
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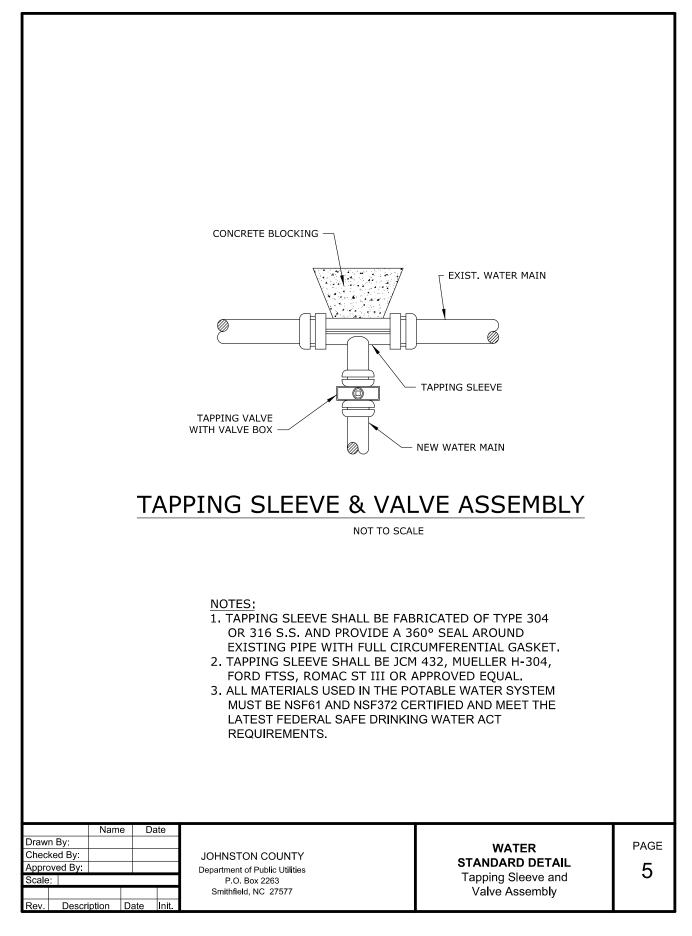
UTILITY CONSTRUCTION

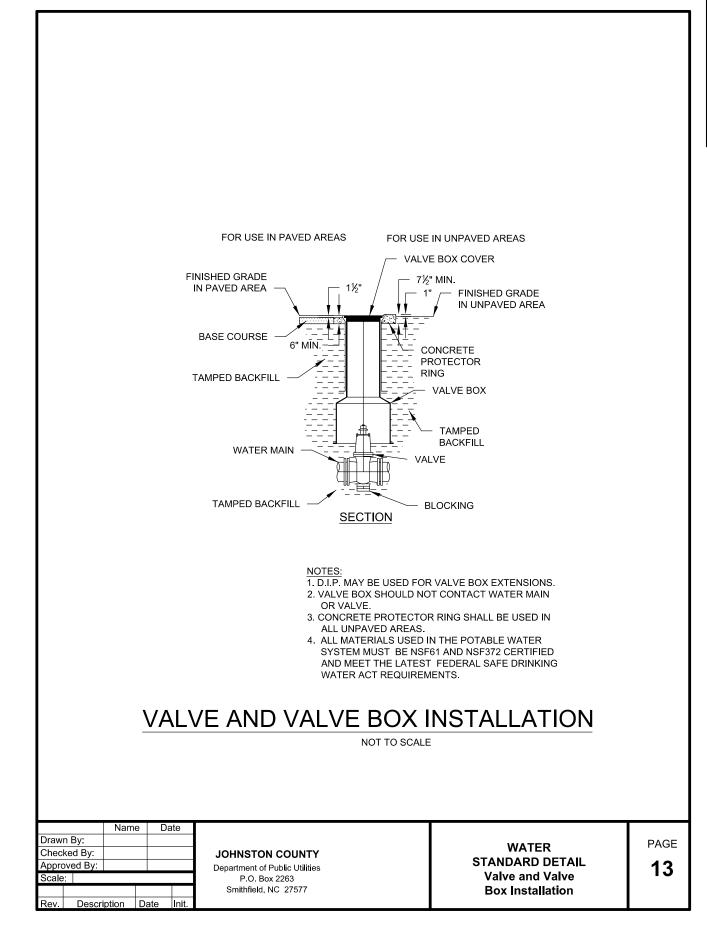
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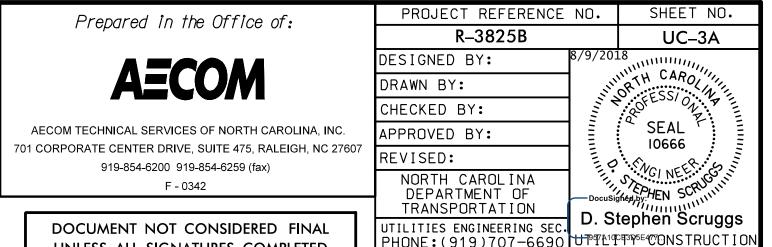
- 1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.
- 2. THE EXISTING WATER UTILITIES BELONG
 TO JOHNSTON COUNTY UTILITIES. THE
 EXISTING SEWER UTILITIES BELONG TO
 JOHNSTON COUNTY AND THE TOWN OF CLAYTON.
- 3. ALL WATER LINES TO BE INSTALLED
 WITHIN COMPLIANCE OF THE RULES AND
 REGULATIONS OF THE NORTH CAROLINA
 DEPARTMENT OF ENVIRONMENTAL QUALITY,
 DIVISION OF WATER RESOURCES,
 PUBLIC WATER SUPPLY SECTION. ALL SEWER
 LINES TO BE INSTALLED WITHIN COMPLIANCE
 OF THE RULES AND REGULATIONS OF THE
 NORTH CAROLINA DEPARTMENT OF
 ENVIRONMENT QUALITY, DIVISION OF WATER
 RESOURCES, WATER QUALITY SECTION.
 PERFORM ALL WORK IN ACCORDANCE WITH THE
 APPLICABLE PLUMBING CODES.
- 4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
- 5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

- 6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
- 7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
- 8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
- 9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, "SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.









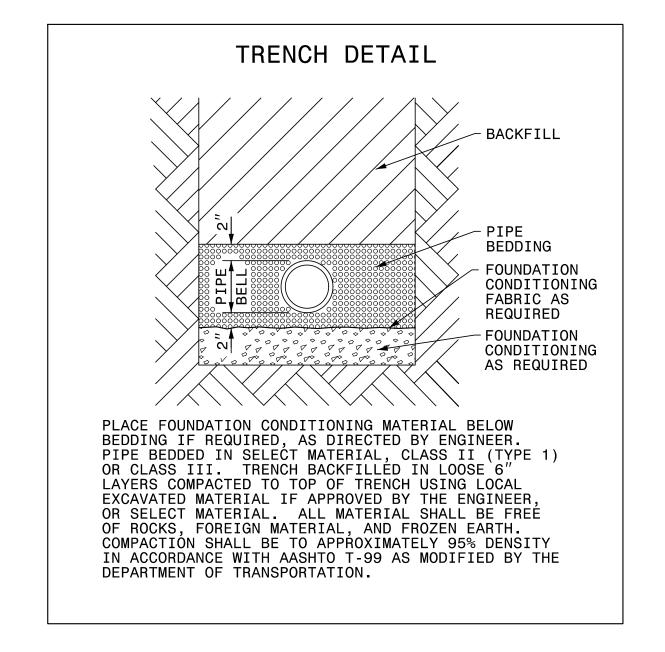
UNLESS ALL SIGNATURES COMPLETED

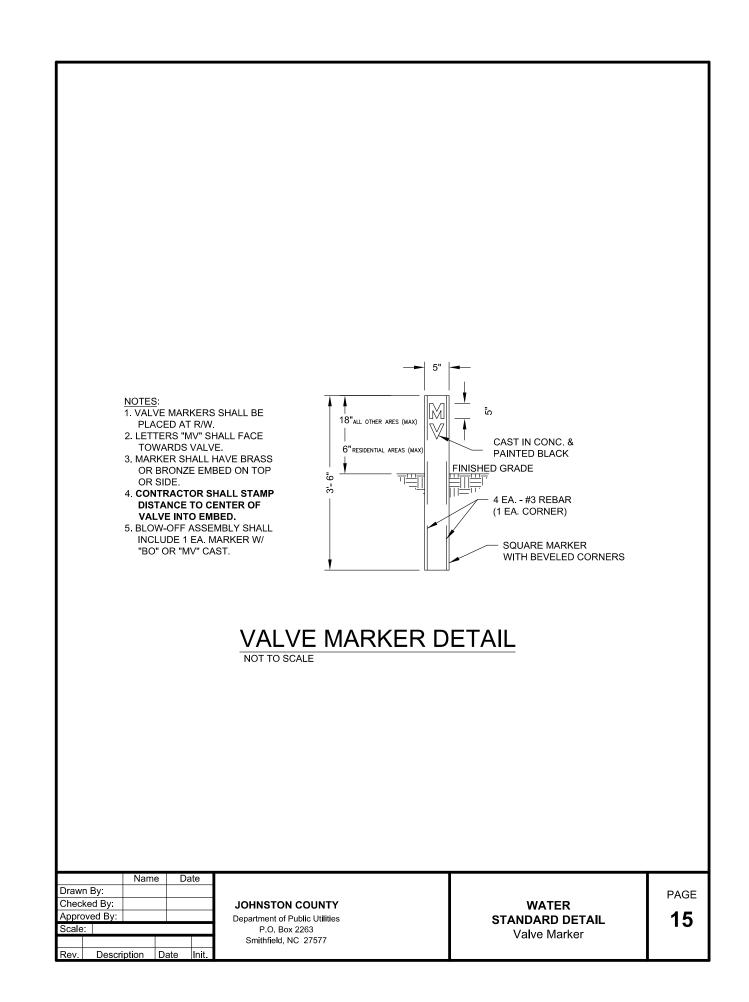
UTILITY CONSTRUCTION

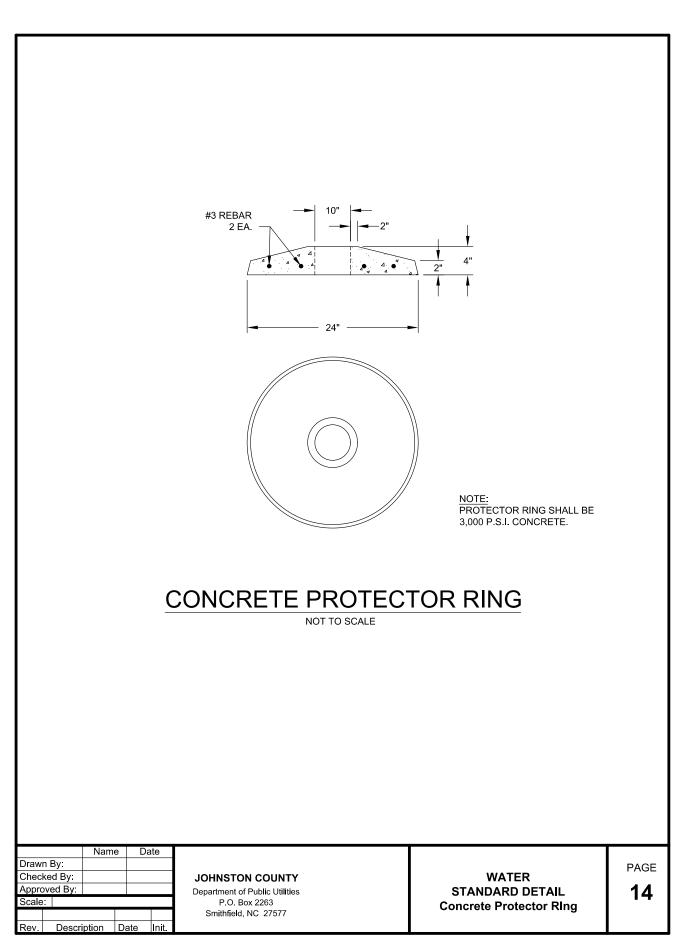
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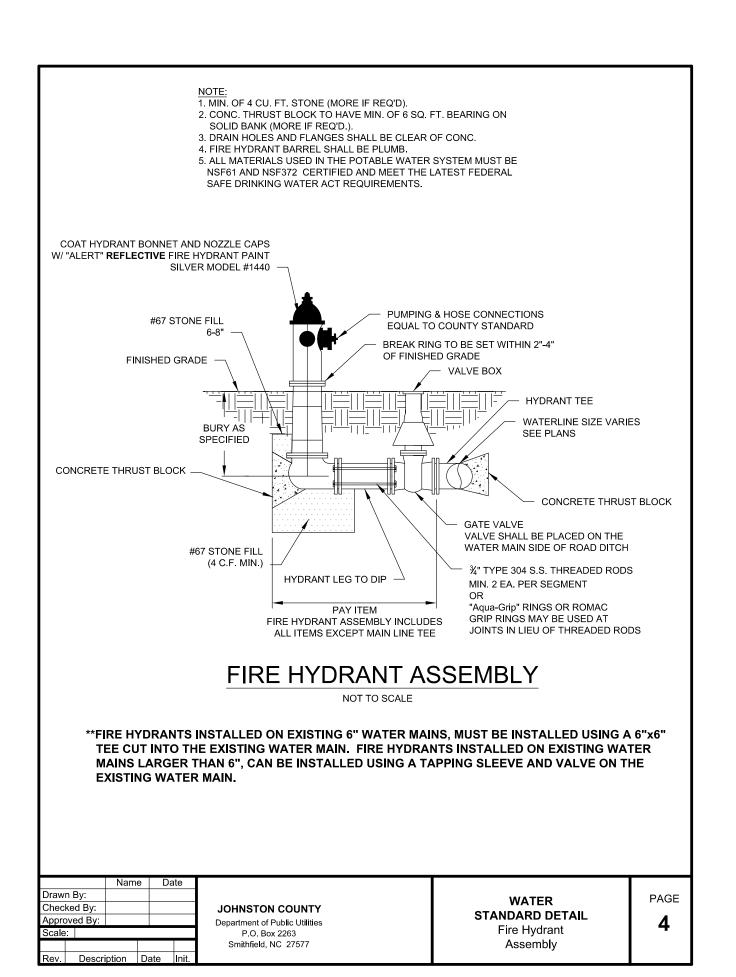
| PHONE:(919)707-6690

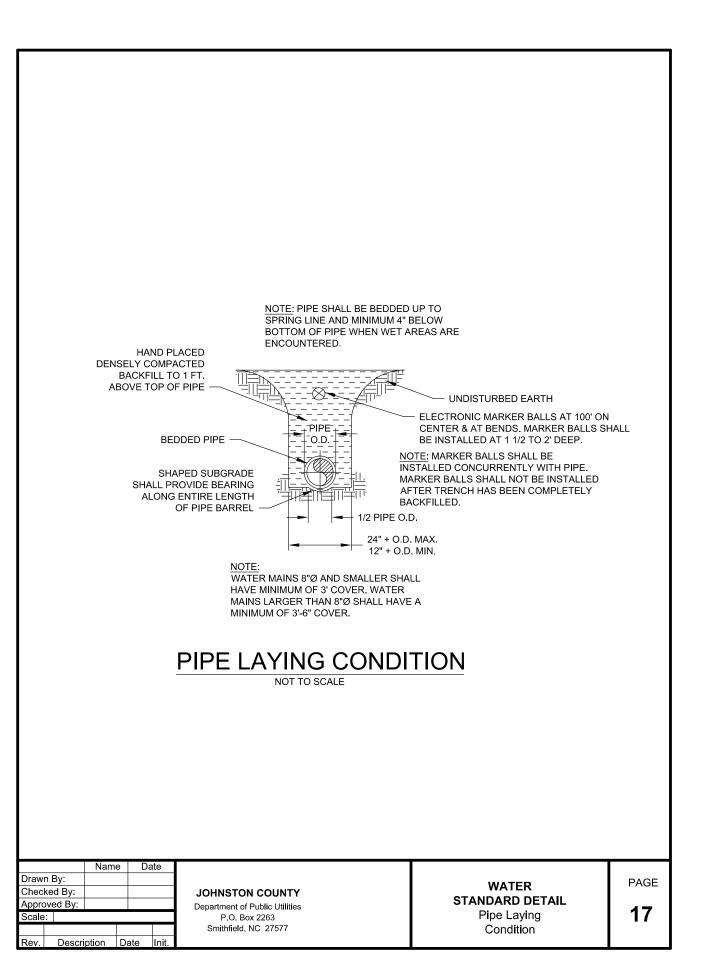
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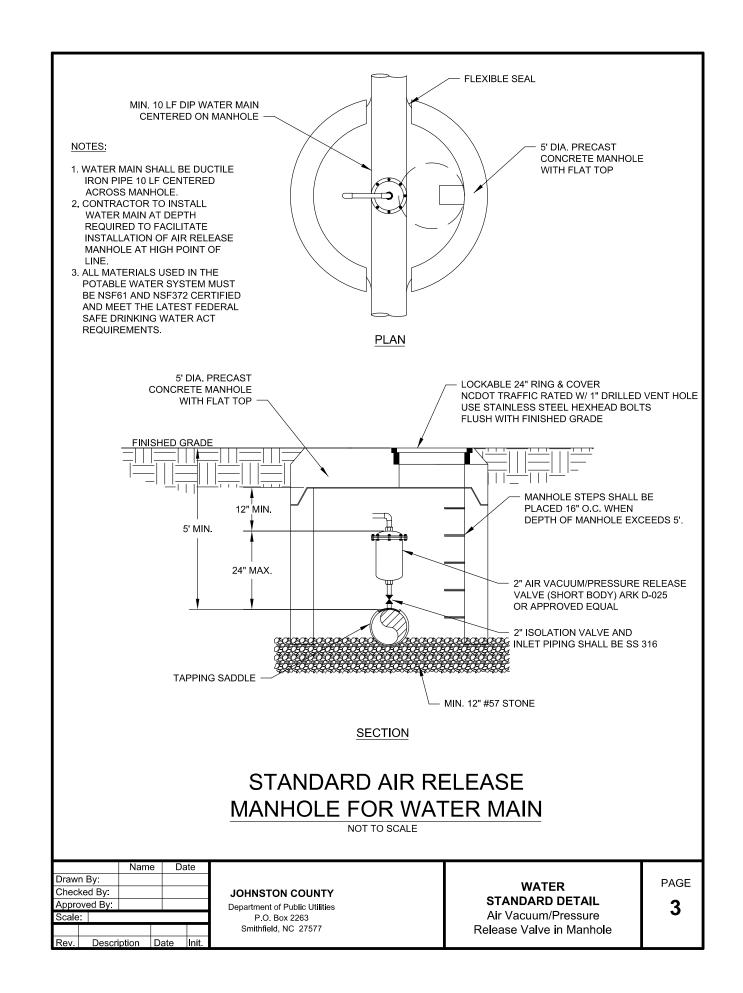


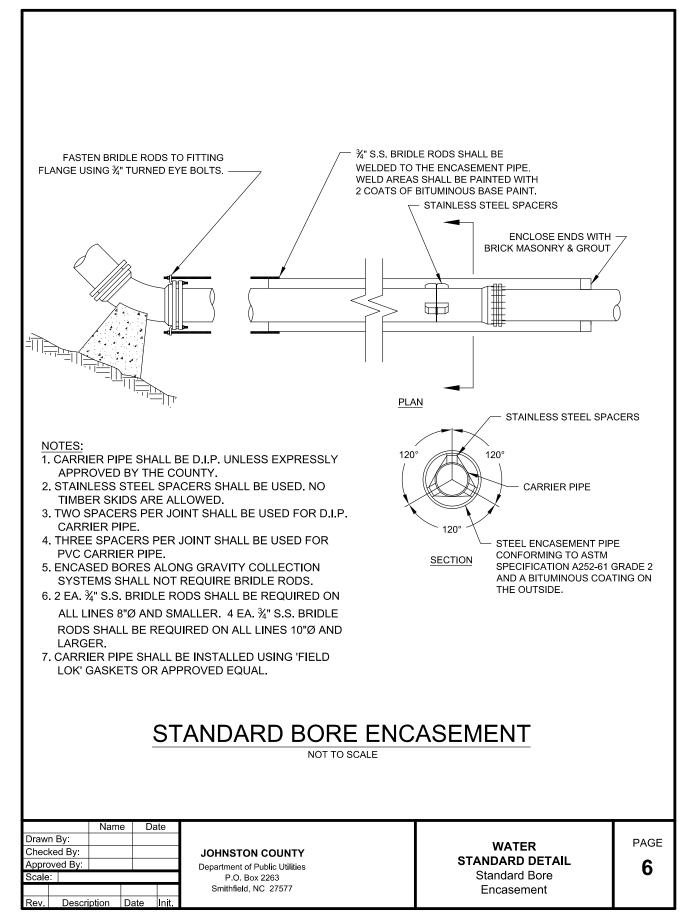


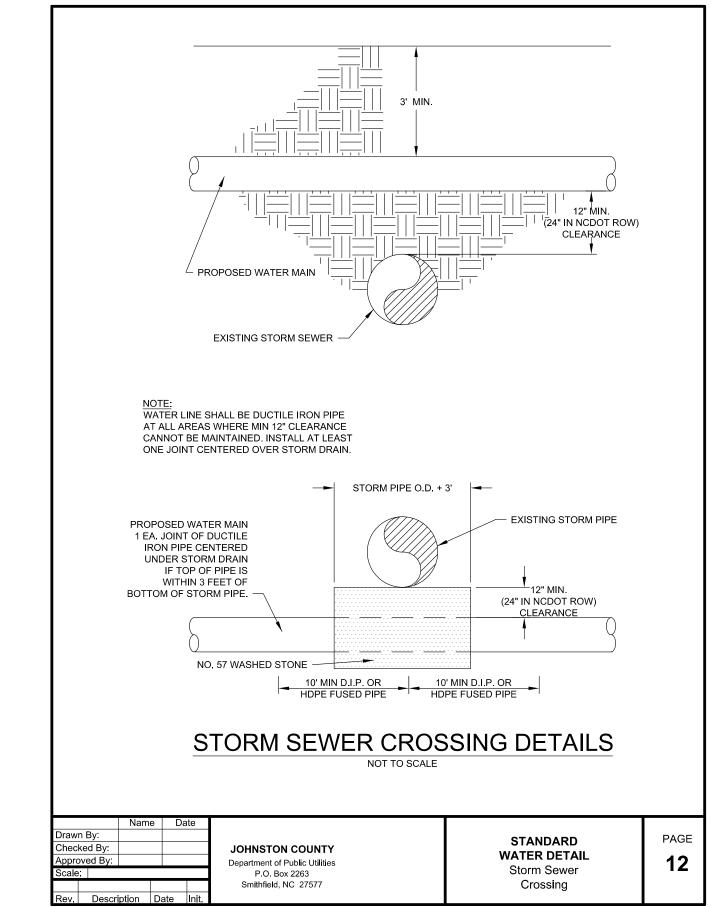


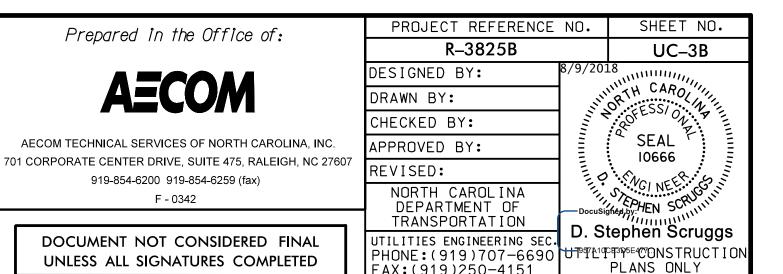






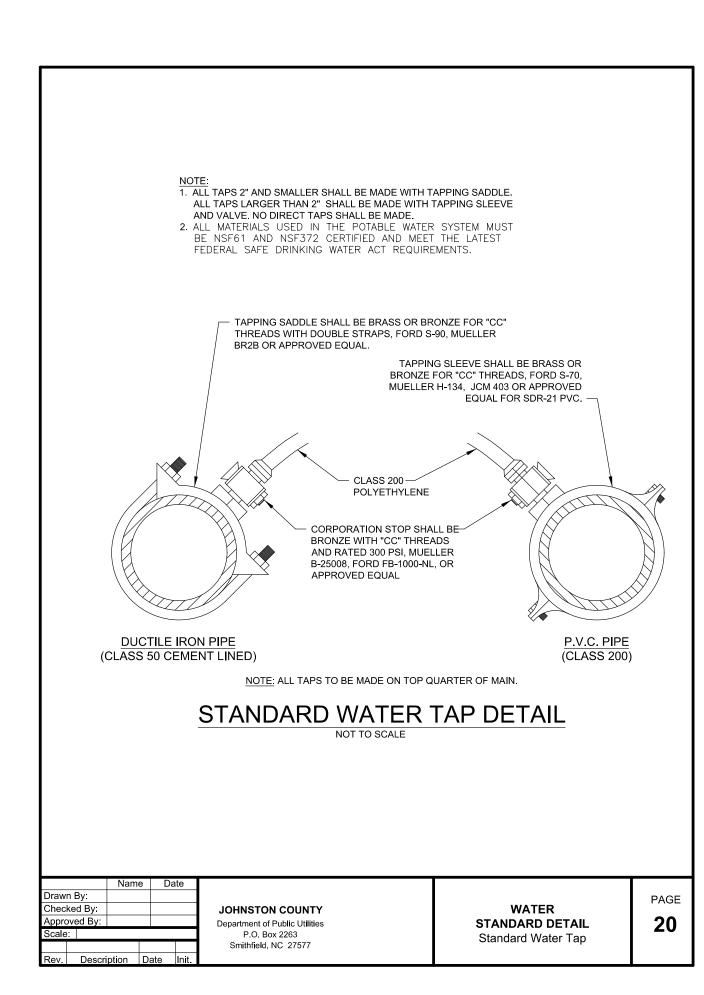


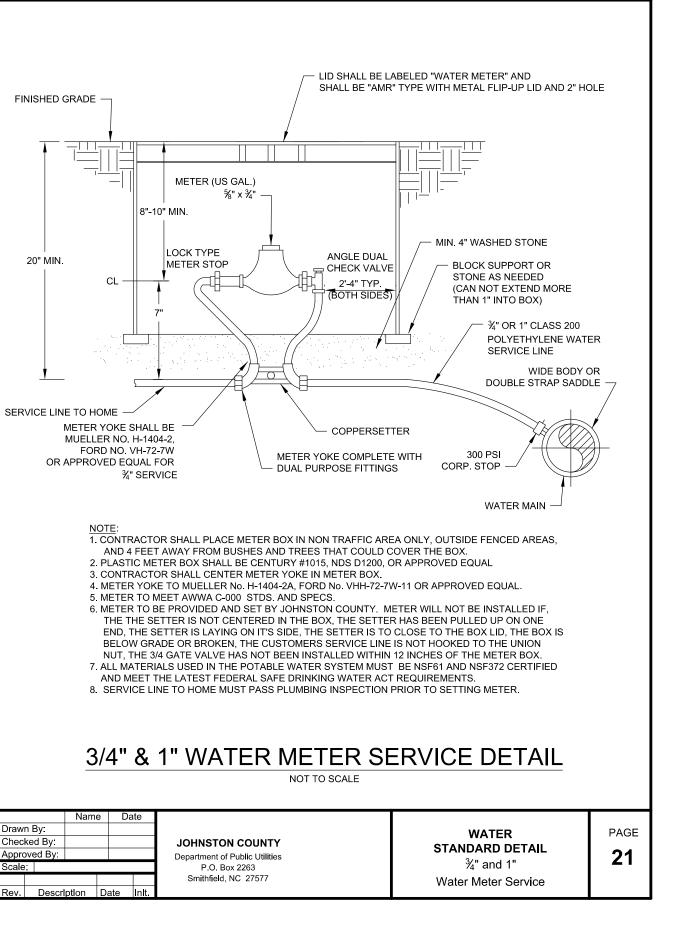


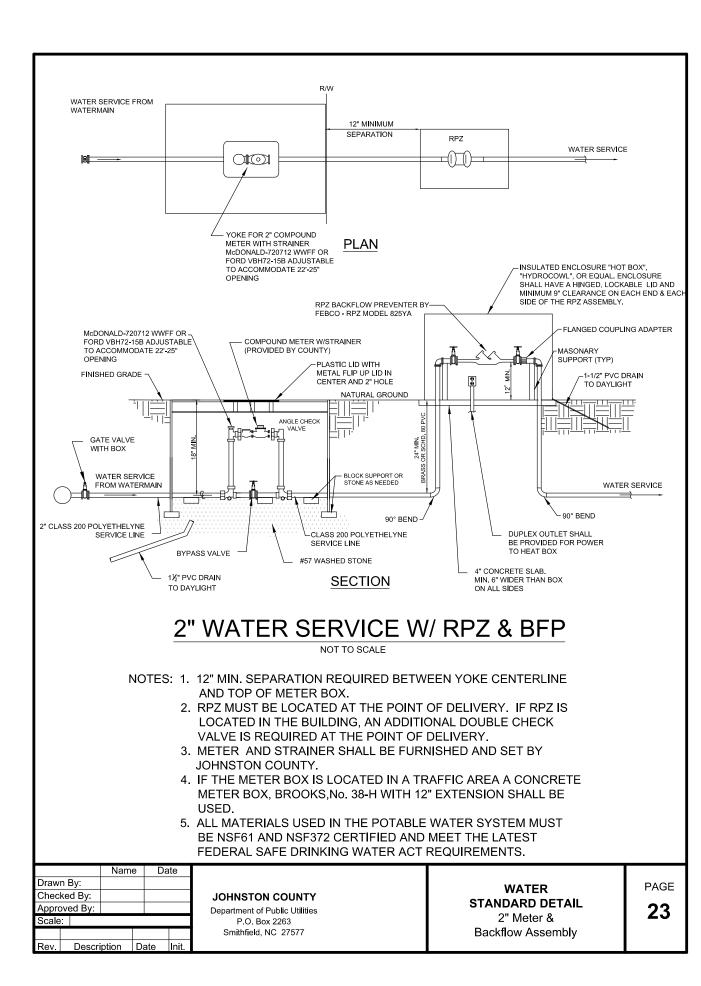


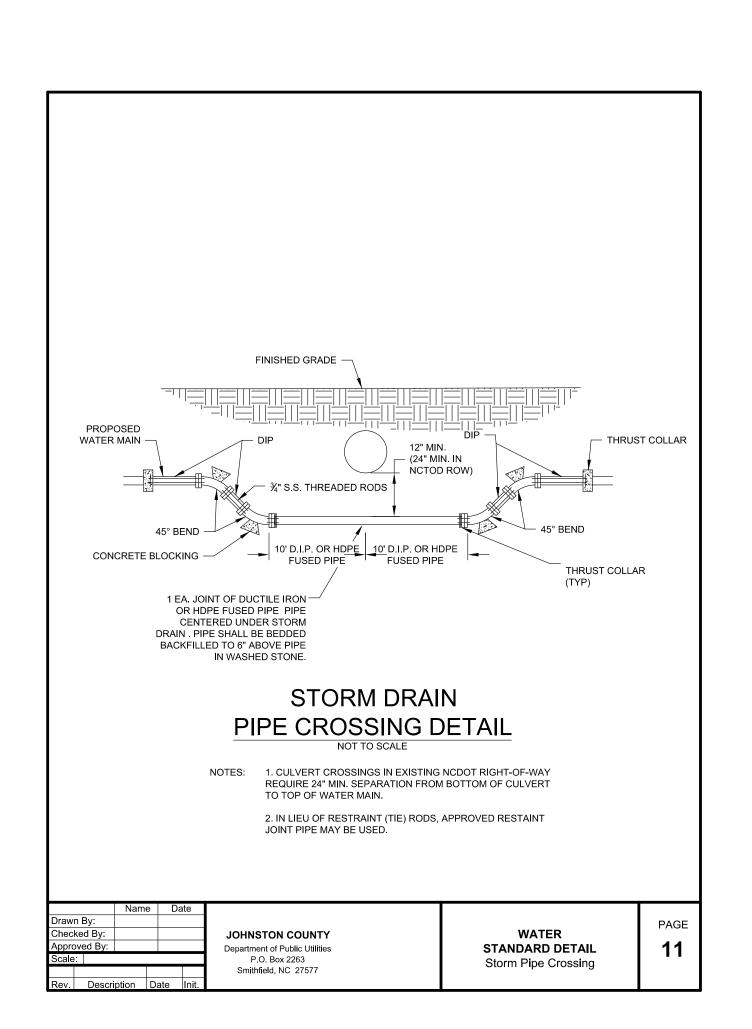
UTILITY CONSTRUCTION

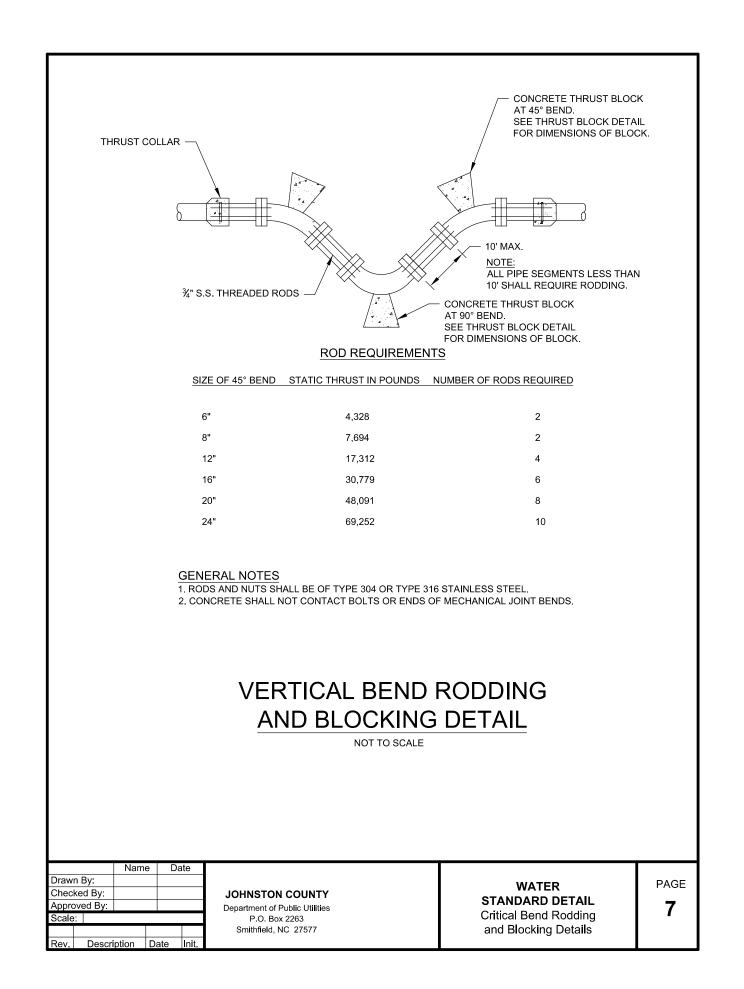
FAX:(919)250-4151

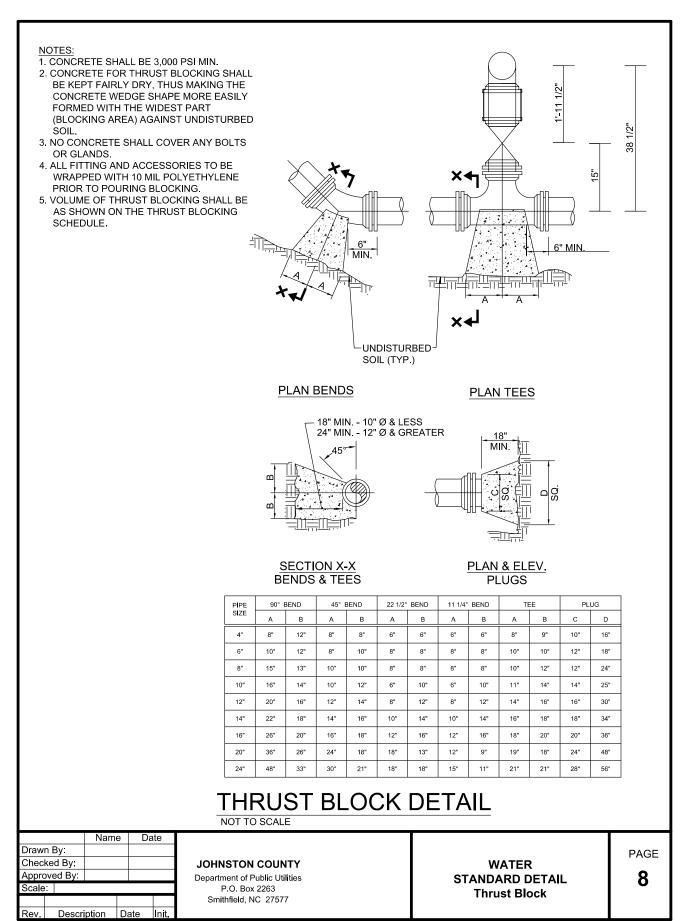


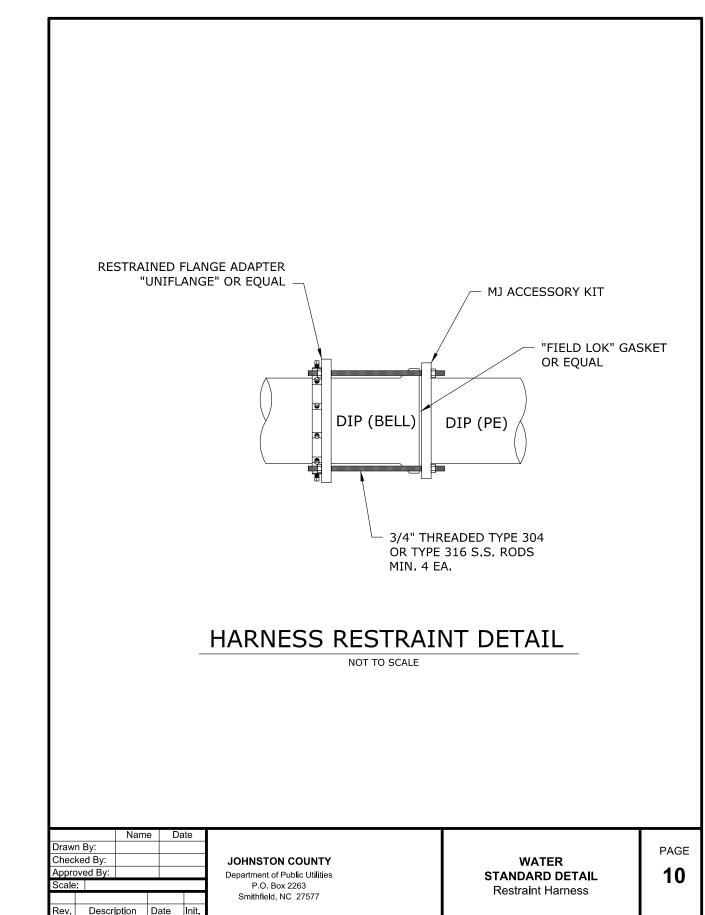


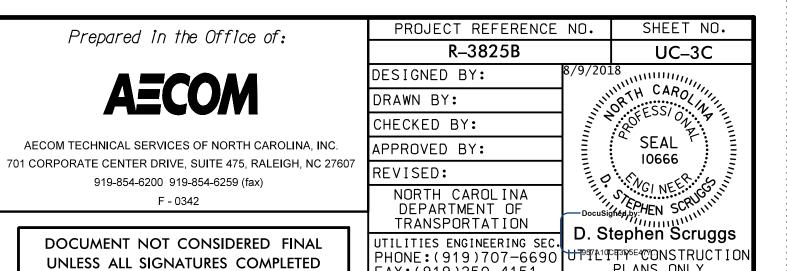








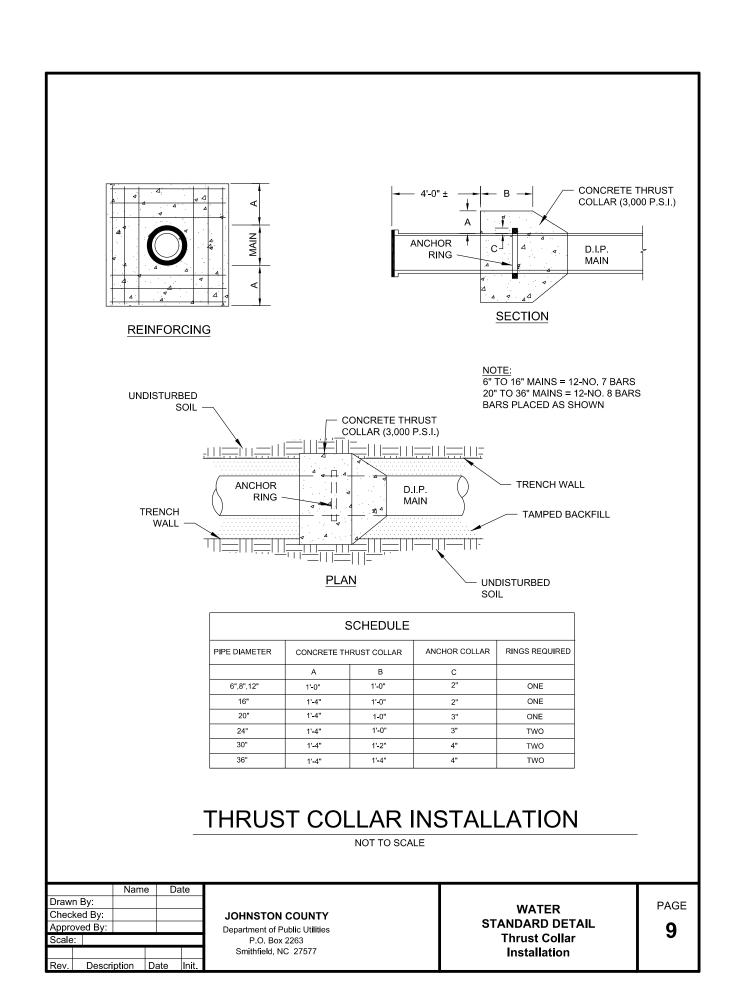


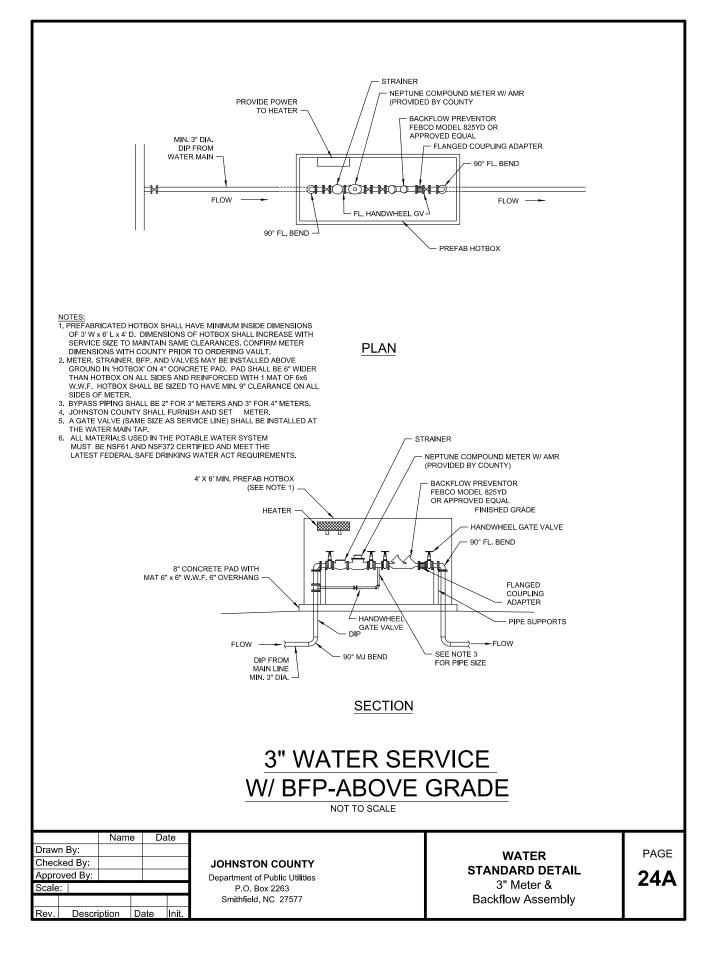


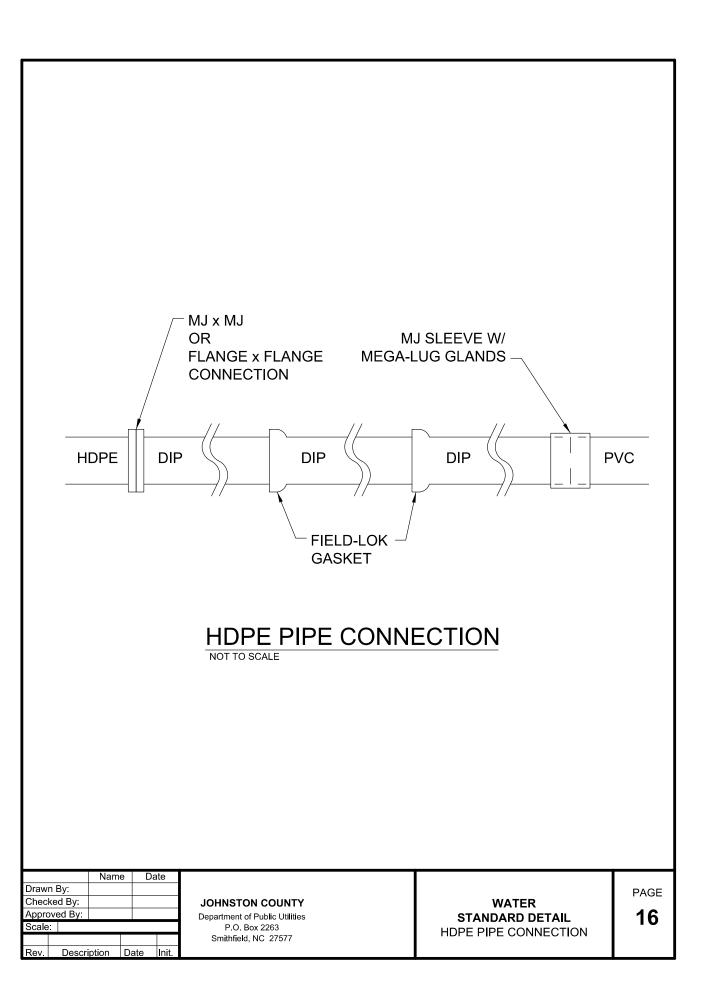
FAX: (919)250-4151

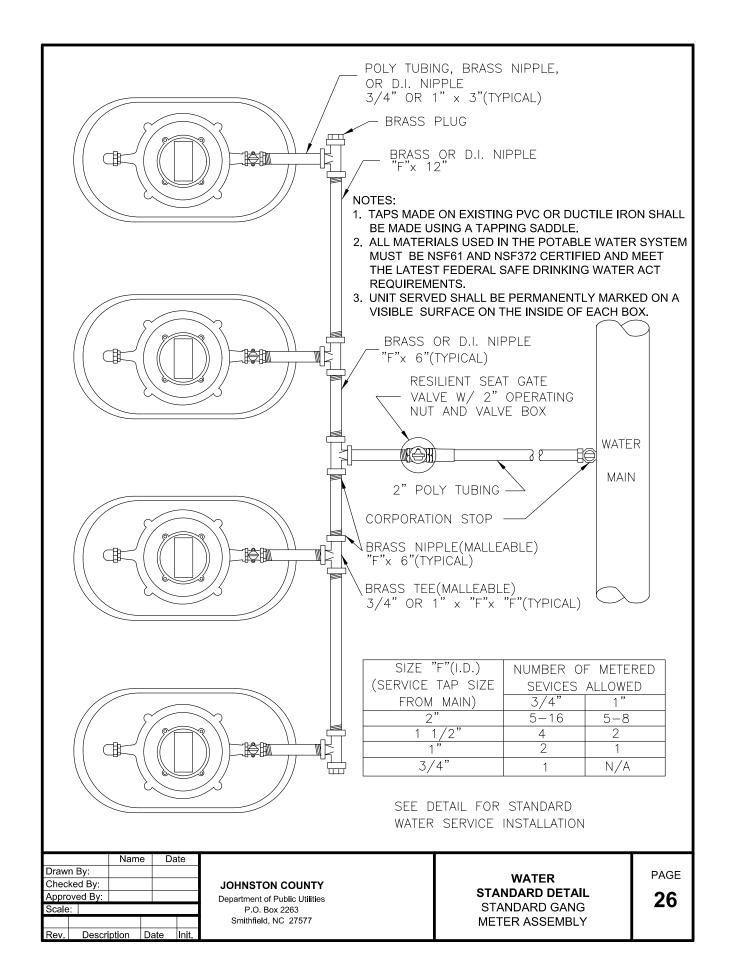
UTILITY CONSTRUCTION

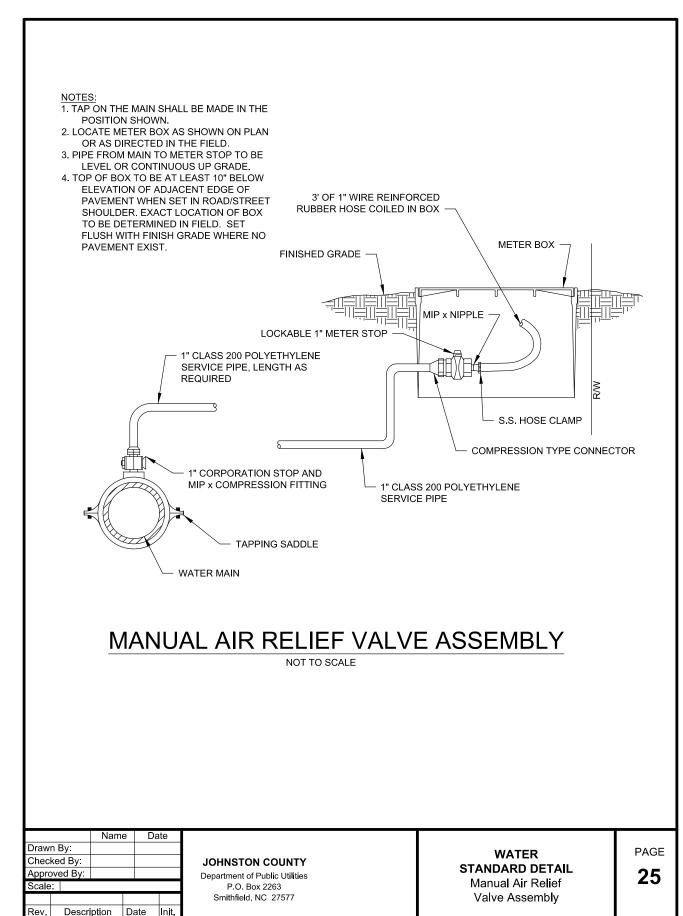
PLANS ONLY

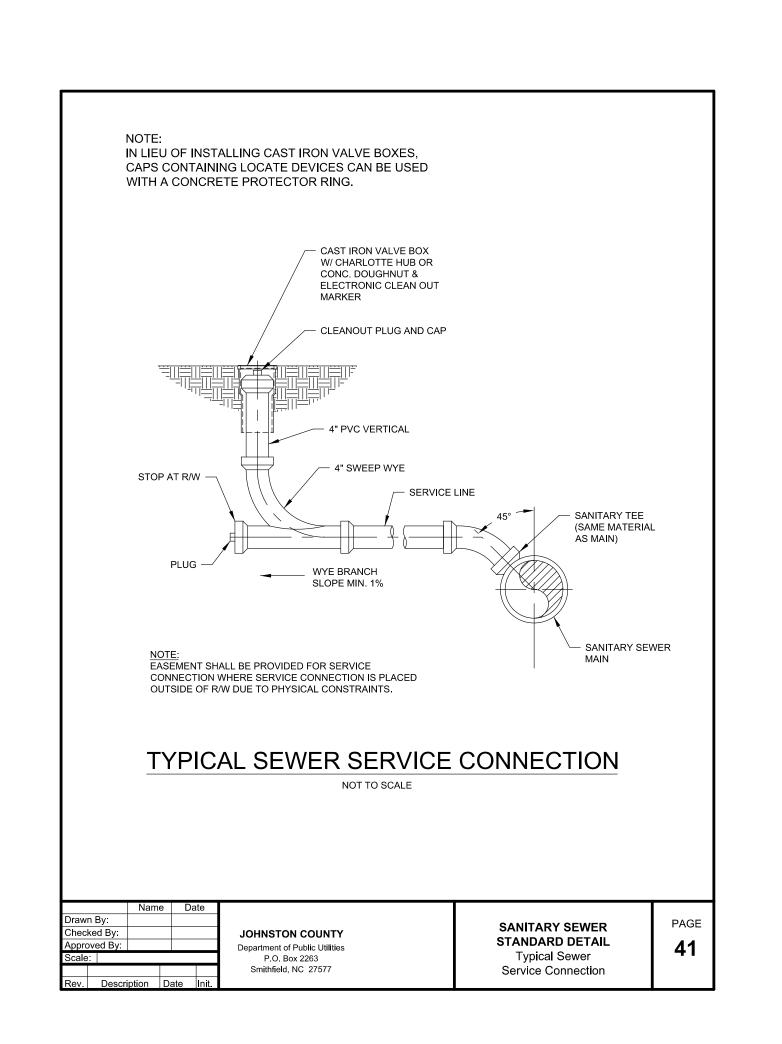


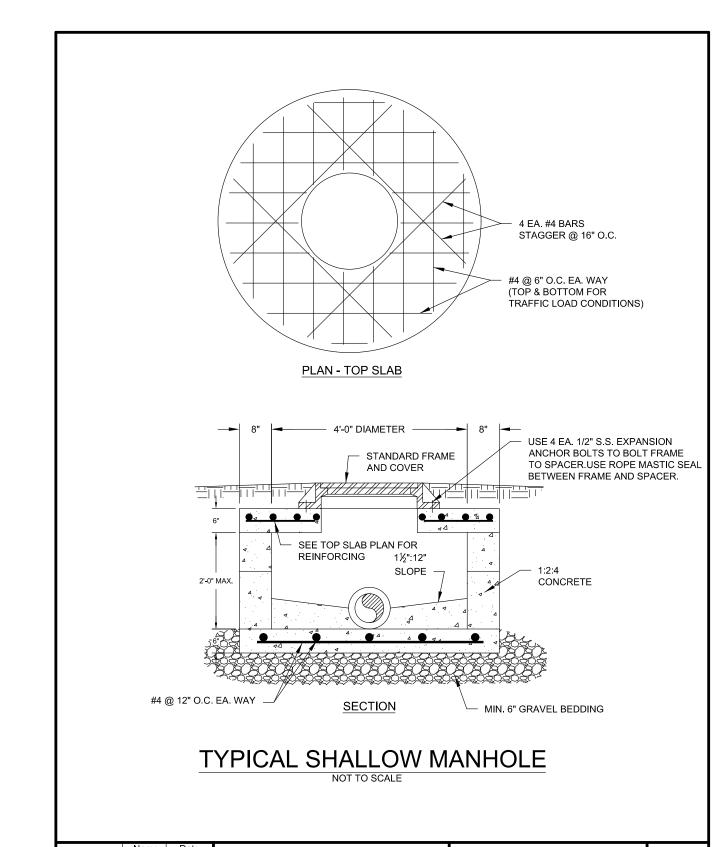












JOHNSTON COUNTY

Department of Public Utilities

P.O. Box 2263

Smithfield, NC 27577

Prepared in the Office of:

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC. 701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607 919-854-6200 919-854-6259 (fax) F - 0342

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PAGE

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SANITARY SEWER

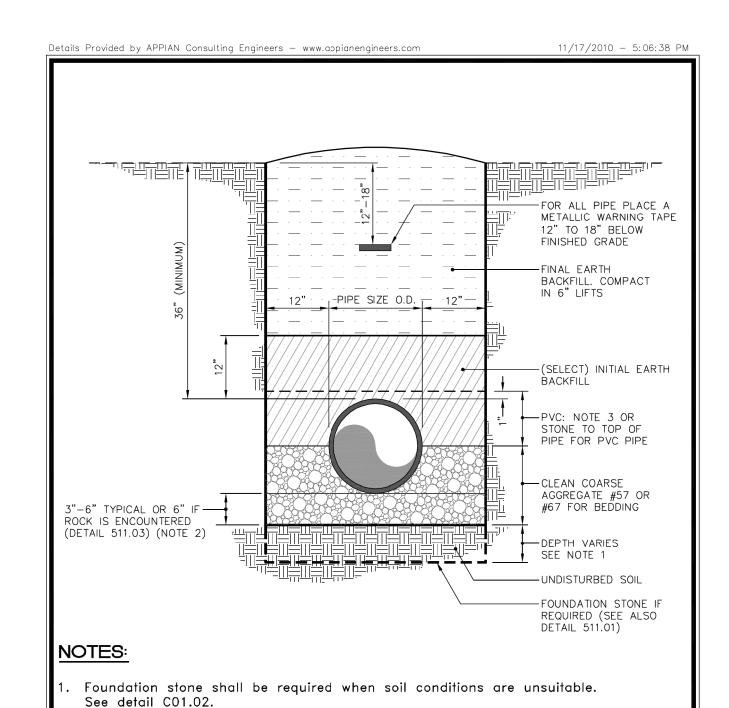
STANDARD DETAIL

Typical Shallow

Manhole

PROJECT REFERENCE NO. SHEET NO. R-3825B UC-3D DESIGNED BY: WIH CARO, DRAWN BY: CHECKED BY: SEAL APPROVED BY: 10666 REVISED: NORTH CAROLINA STEPHEN SCR DEPARTMENT OF TRANSPORTATION D. Stephen Scruggs UTILITIES ENGINEERING SEC PHONE: (919)707-6690 UTTPERSECTION FAX: (919)250-4151 PLANS ONLY

UTILITY CONSTRUCTION



An additional 1 inch depth of bedding material will be required for each

additional 2 feet of trench depth in excess of 16 feet up to a maximum of 12

Haunching depth for flexible wall pipe (C900 PVC and SDR35) shall be outside

Where rock is encountered, refer to detail 511.03 for subgrade preparation.

SANITARY SEWER PIPE

LAYING CONDITIONS

🛕 FIELD & WOODS APPLICATION lackbreak STREET APPLICATION 🚖

- MANHOLE MARKER POST

12" - 24" FROM TOP

OF COVER TO GRADE

RUBBER (MASTIC) SEALANT

APPLIED TO TOP OF CONE

STEPS REQUIRED FOR ALL-

MANHOLES (DETAIL CO6.04)

N USE ECCENTRIC CONE —

PRECAST MANHOLE-

说 ASTM. C478, AASHTO

M-199)

[(MEET REQUIREMENTS OF

THRU MANHOLE = 0.10

FALL UNLESS SHOWN

OTHERWISE ON PLANS.

SEE DETAIL 532.01 FOR

INVERT & BOOT DETAIL -

USE 5' DIA. MANHOLE W/6" MINIMUM EXTENDED BASE

FORMED CONCRETE INVERT AND

PIPE ENTRY PER DETAIL 532.01 -

WHEN MANHOLE DEPTH

SET MANHOLE IN 12"

EXCEEDS 12'-

NO. 57 STONE

MINIMUM (2) 5/8" S.S. ANCHOR

BOLTS TO BOLT FRAME TO CONE.

(NOTE 13)

(NOTE 7)——

—12" - 18" BURY

SECTION

pipe diameter + 1 inch. Haunching shall be thoroughly compacted #57 or #67

For all force mains, embedment to be Type 1 or 2 as shown on detail 511.02.

TOWN of CLAYTON

SCALE: DETAIL #
Not To Scale 2 531.0

- MANHOLE COVER & RING

NFI-SHIELD UNIBAND

PER DETAIL 532.11

TO FIRST STEP

EXTERNAL SEALING SYSTEM

MANHOLE RING AND COVER

GRADE ADJUSTMENT. MAXIMUM

24" FROM TOP OF CASTING

-ALL JOINTS TO BE T&G 🔼

AND WILL HAVE MASTIC

PRECAST MANUFACTURER

TO MEET ASTM C-478

-INFI-SHIELD SEAL WRAP

ON ALL BURIED JOINTS

PER DETAIL 532.11

EXTERNAL SEALING SYSTEM

PRECAST OPENING OR CORE & BOOT REQUIRED FOR ALL PIPES

SEE PLANS FOR PIPE SIZES. SEE

- SEE SPECS FOR FOUNDATION

IMPROVEMENT WHEN NEEDED

SCALE: Not To Scale

2532.0

TOWN of CLAYTON

STANDARD ECCENTRIC

PRECAST MANHOLE DETAIL

Pipes will be grouted inside.

requirements / limitations).

Yr. BFE. See detail 532.10.

tight ring & cover.

& bottom)

Town.)

Boots to meet ASTM C-923 standards. See detail 532.01 for typical invert shaping.

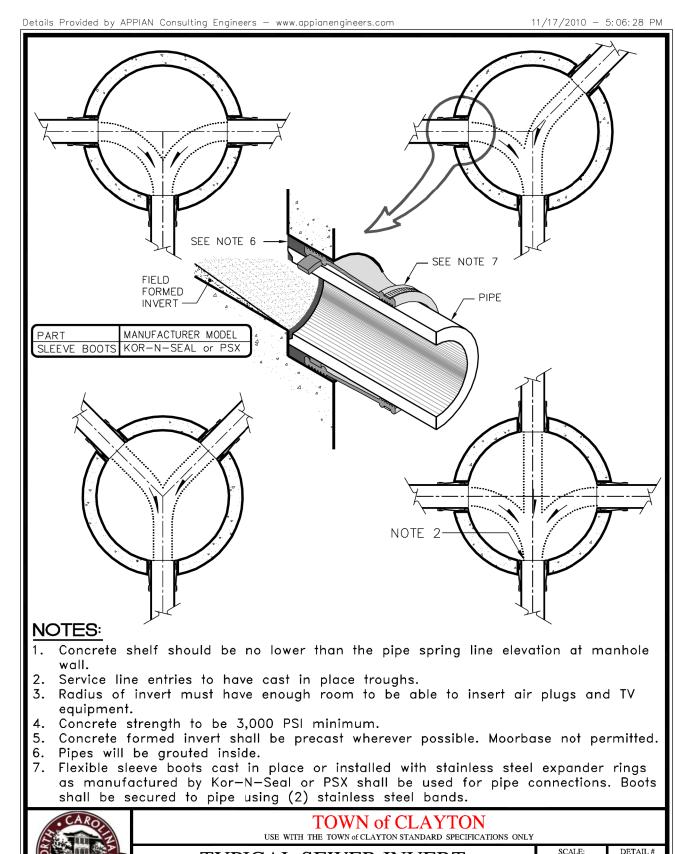
Place manhole opening over the effluent line.

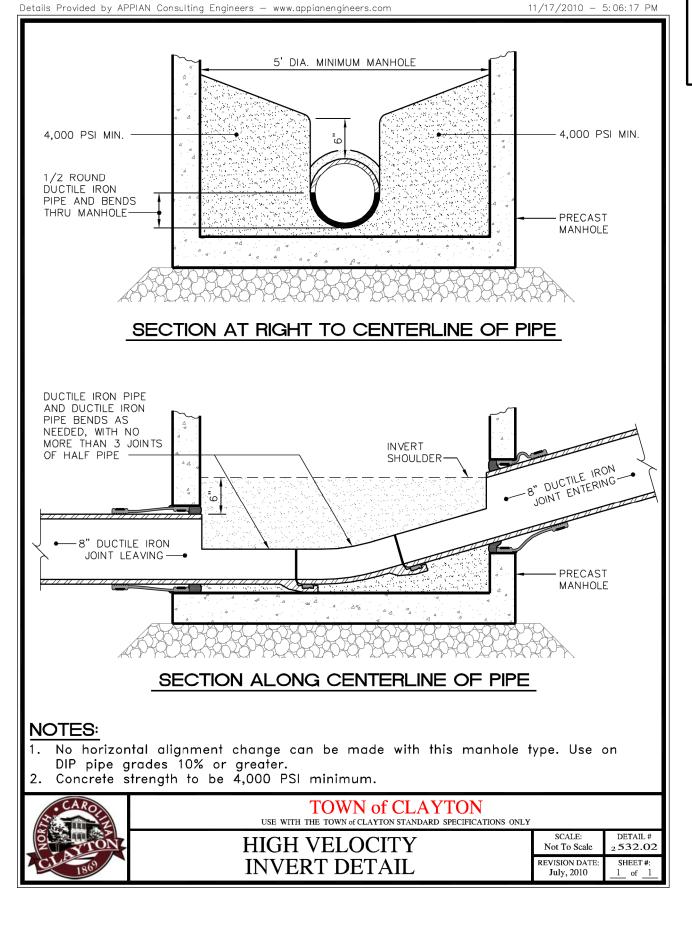
-REINFORCING PER

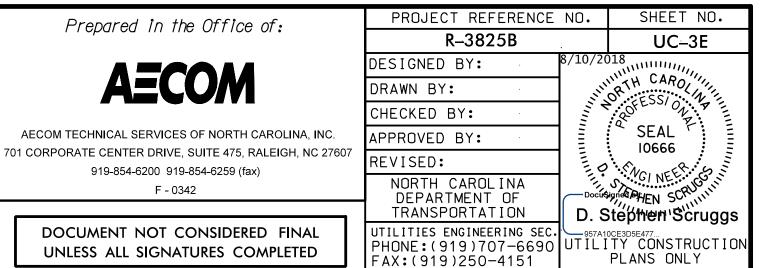
SEALER

SEE DETAIL CO6.03 FOR

SEE DETAILS C06.01 & C06.02

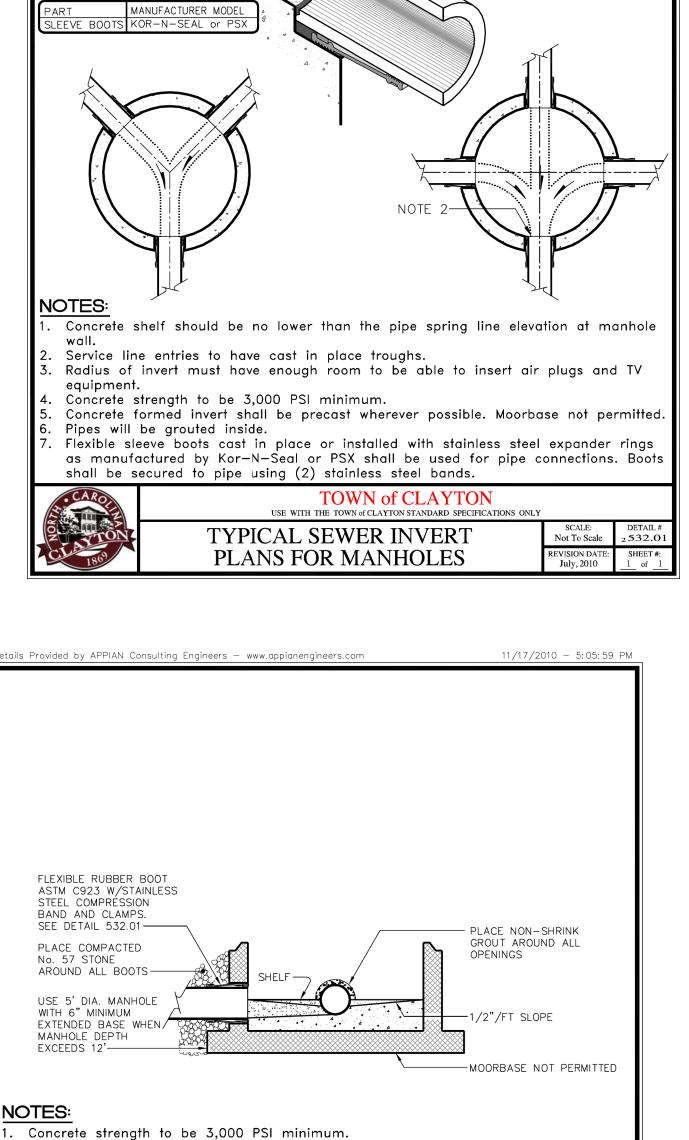






F - 0342

UTILITY CONSTRUCTION



Flexible sleeve boots cast in place or installed with stainless steel expander rings.

Maximum depth 4' diameter manhole = 12' (see sewer design section for other

For watertight applications, place butyl rubber between frame and cone with water

10. Lubricate the following: Pipe exterior, boot interior, boot exterior, S.S. bands (Top

. Manholes subject to flooding shall have the top of the manhole rim a minimum

of 12" above the 100 Yr. BFE or vented every 3rd manhole, but not exceeding

3. Manhole marker post to be installed by contractor over line. (Marker furnished by

STANDARD ECCENTRIC

PRECAST MANHOLE DETAIL

TOWN of CLAYTON

Not To Scale

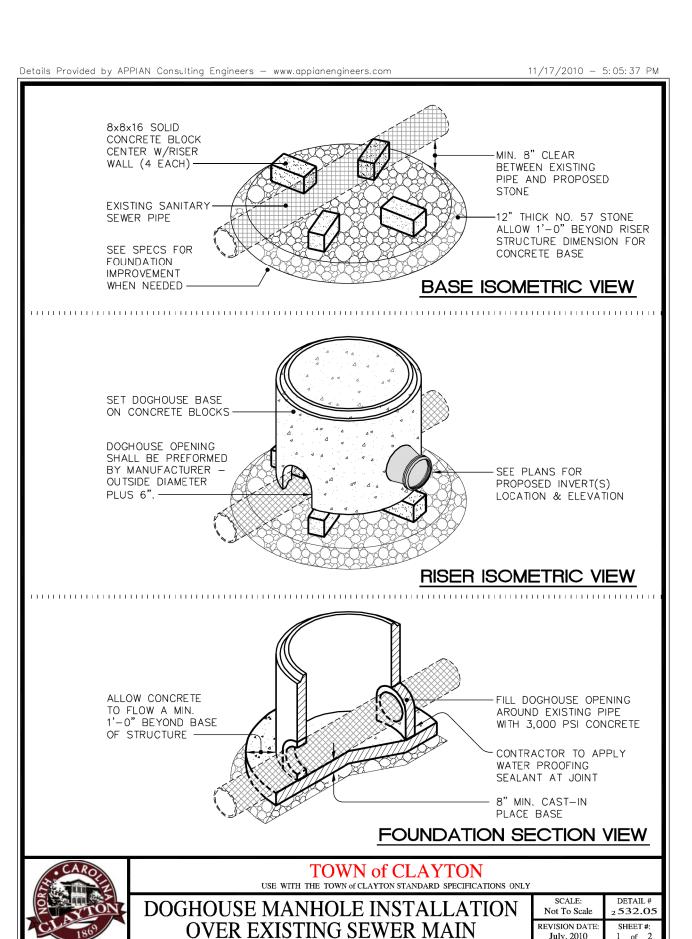
532.0

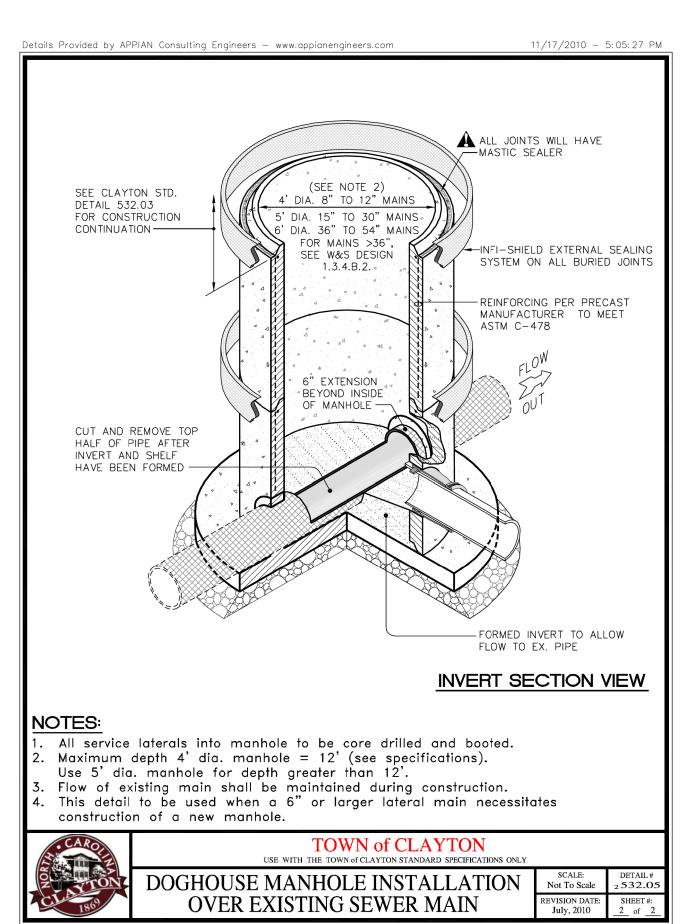
1,000 LF between vents. Vents shall be placed a minimum of 12" above the 100

Service laterals into existing manholes to be core drilled and booted.

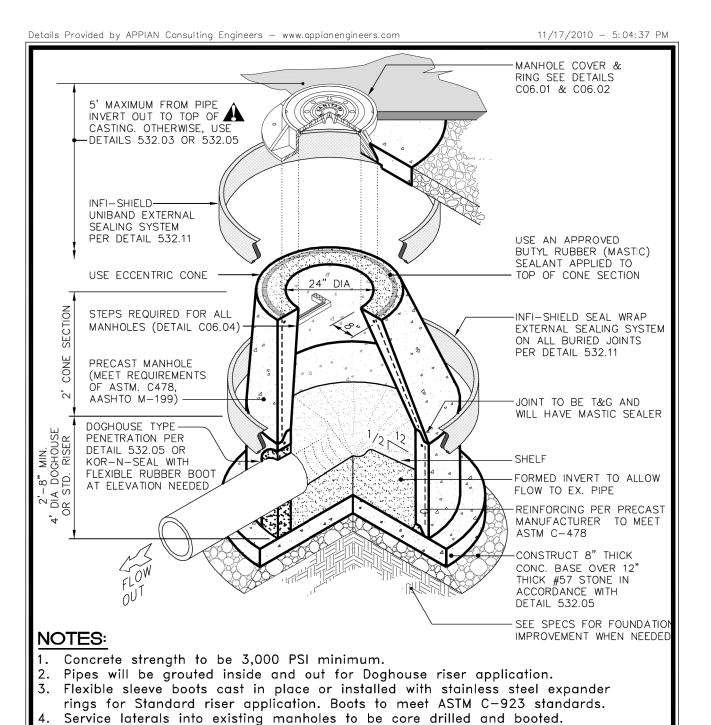
For pipe connections 12" and larger, 2 sets of bands shall be required.

If height above grade exceeds 24", use eccentric flat top.









For watertight applications, place butyl rubber between frame and cone with

TYPICAL SHALLOW

PRECAST MANHOLE DETAIL

TOWN of CLAYTON

Not To Scale 2 532.0

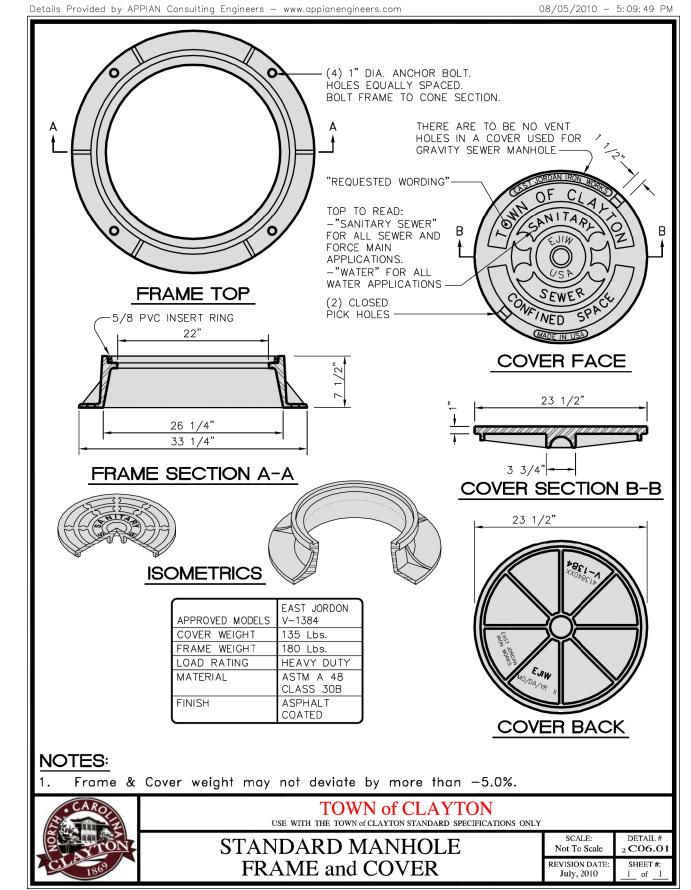
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

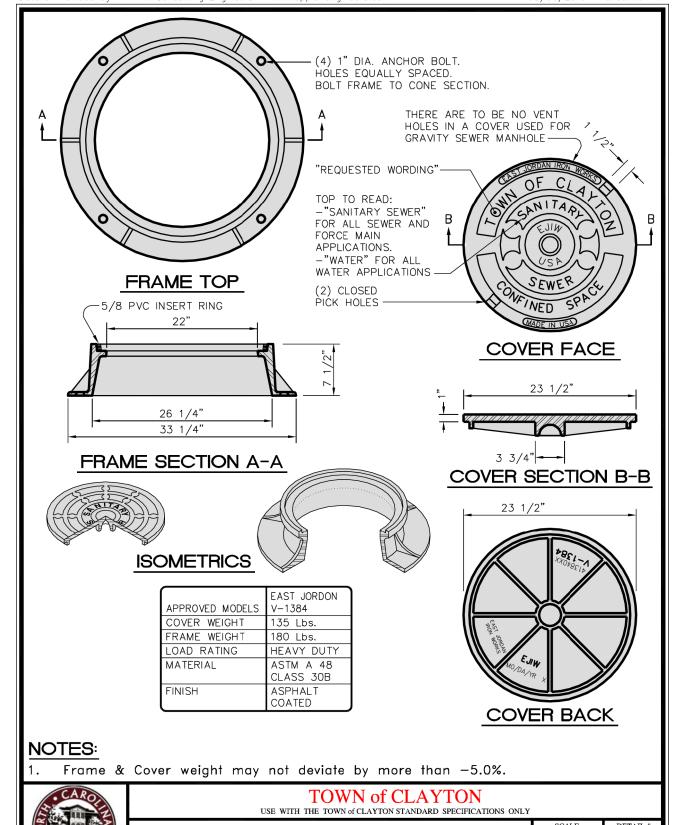
For pipe connections 12" and larger, 2 sets of bands shall be required. Lubricate the following: Pipe exterior, boot interior, boot exterior, S.S. bands

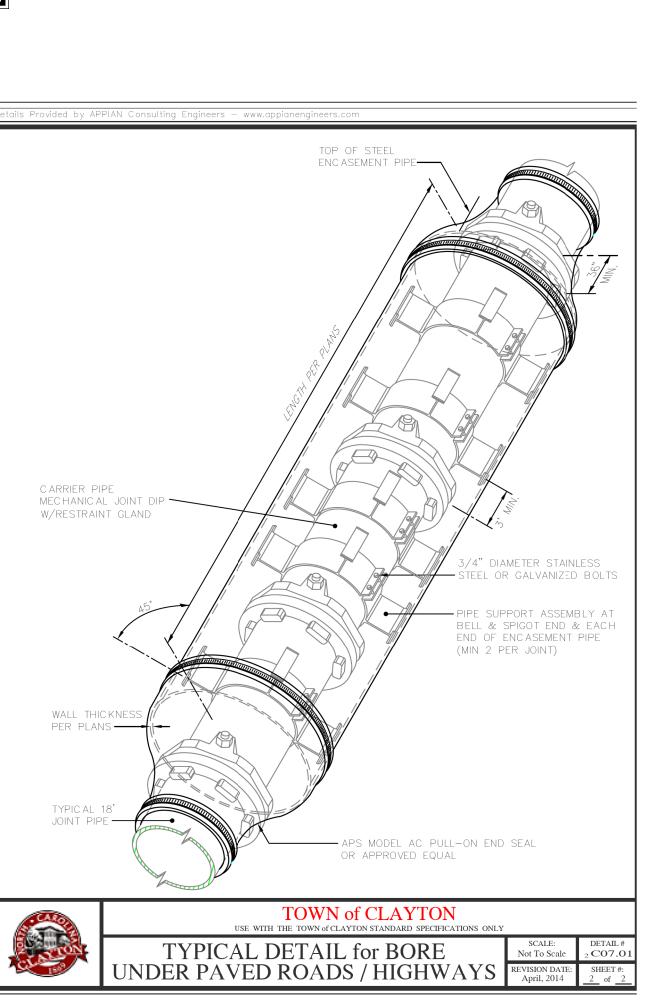
water tight ring & cover.

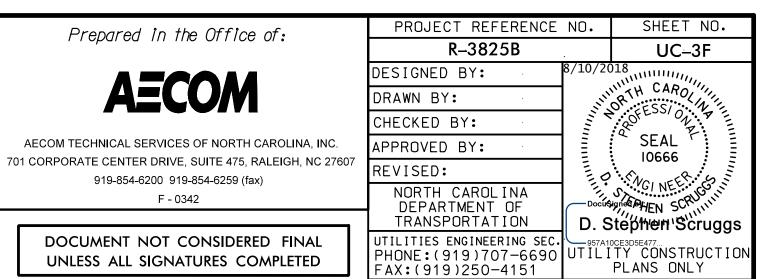
Place manhole opening over the effluent line.

(Top & bottom)





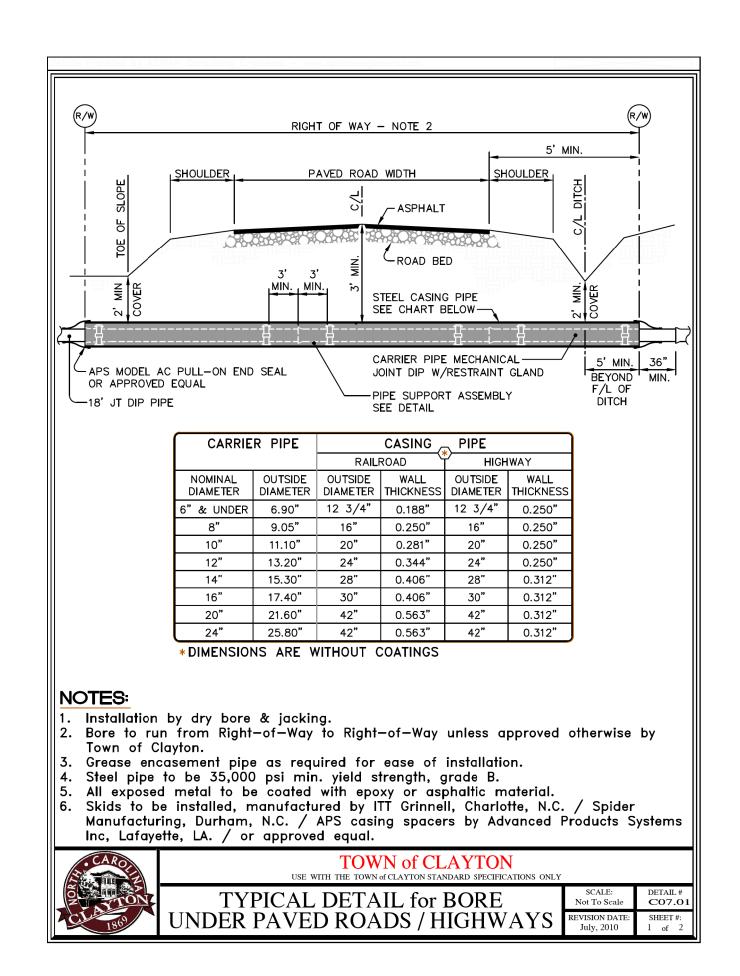


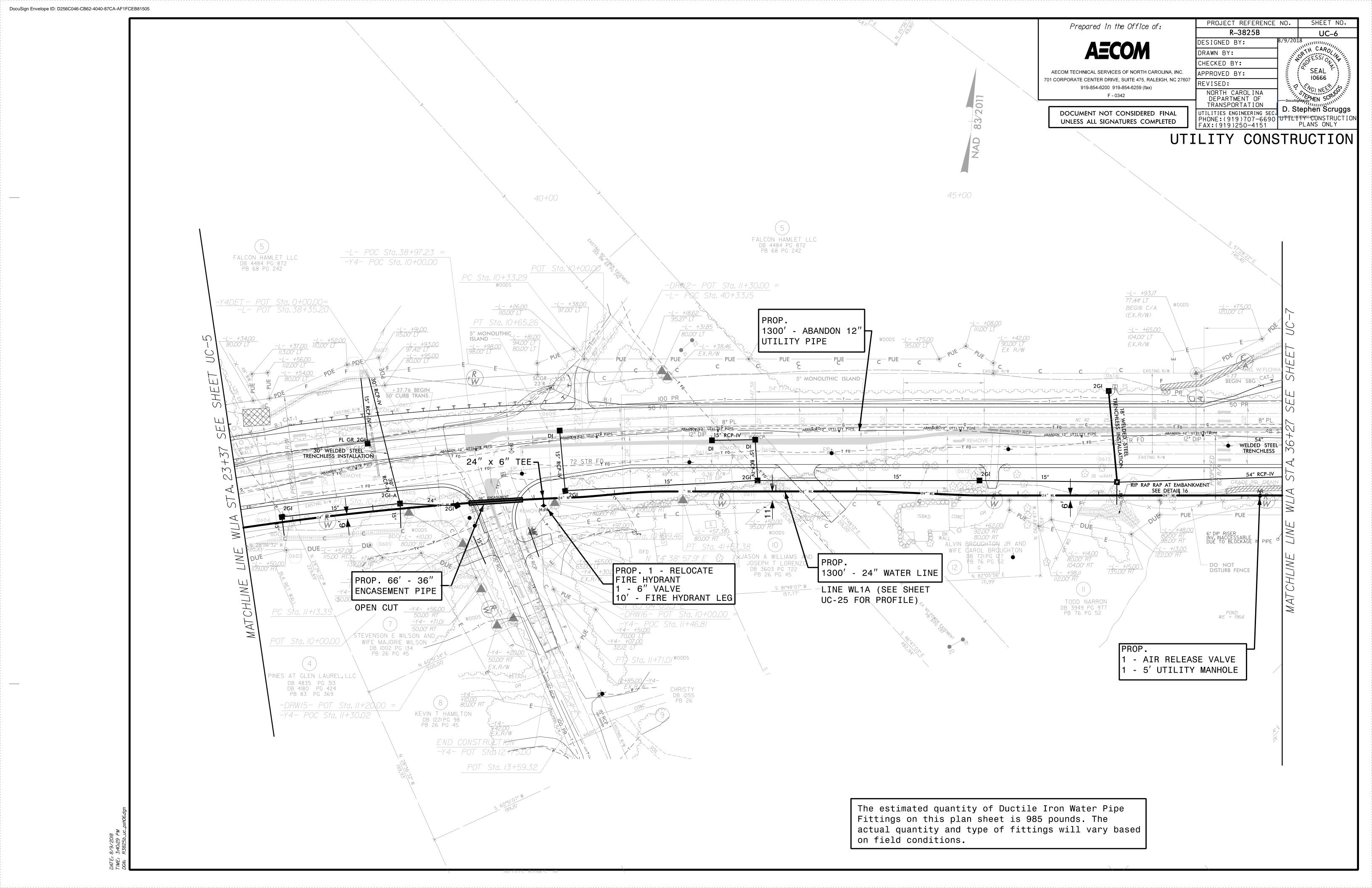


919-854-6200 919-854-6259 (fax)

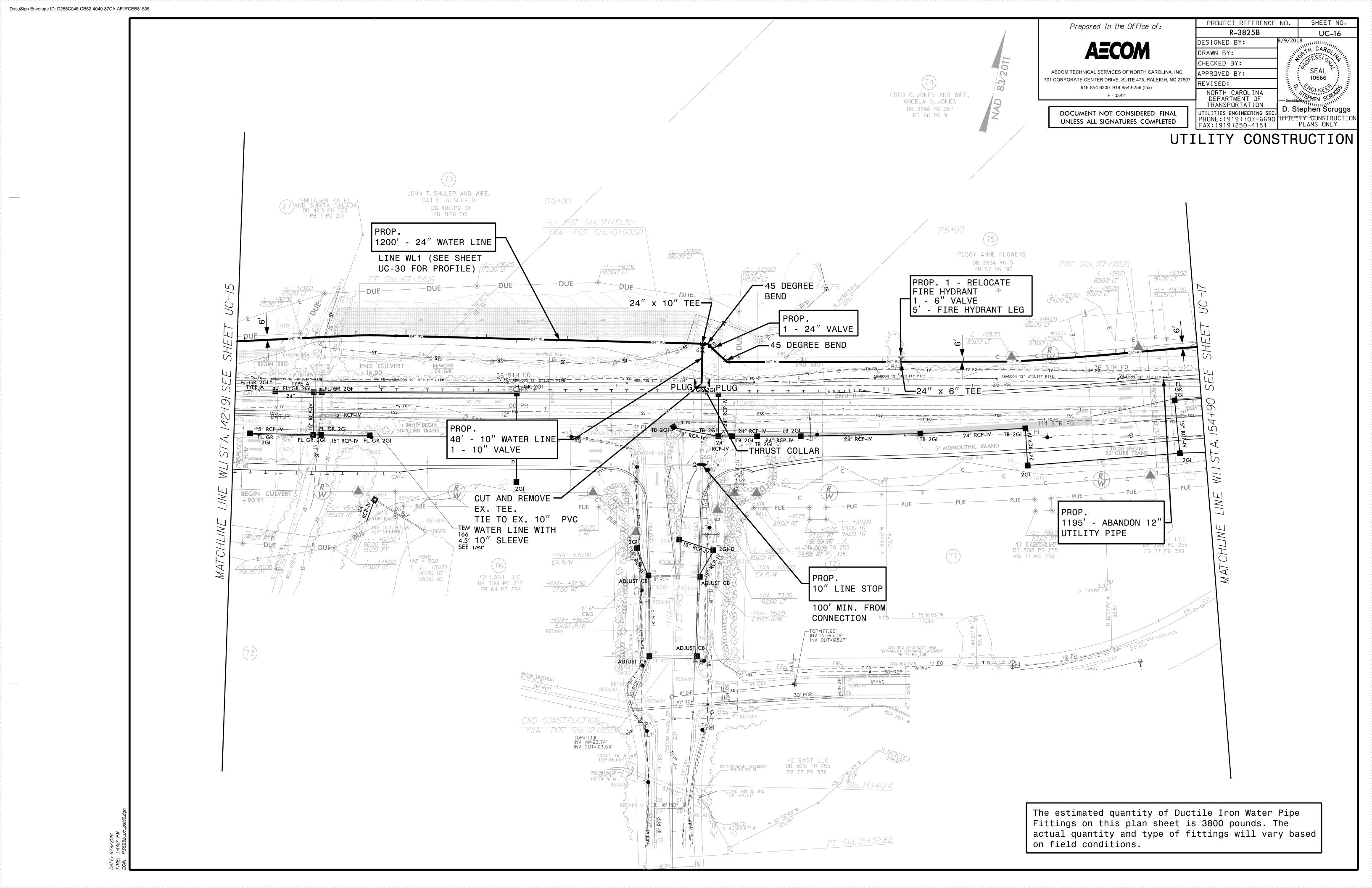
F - 0342

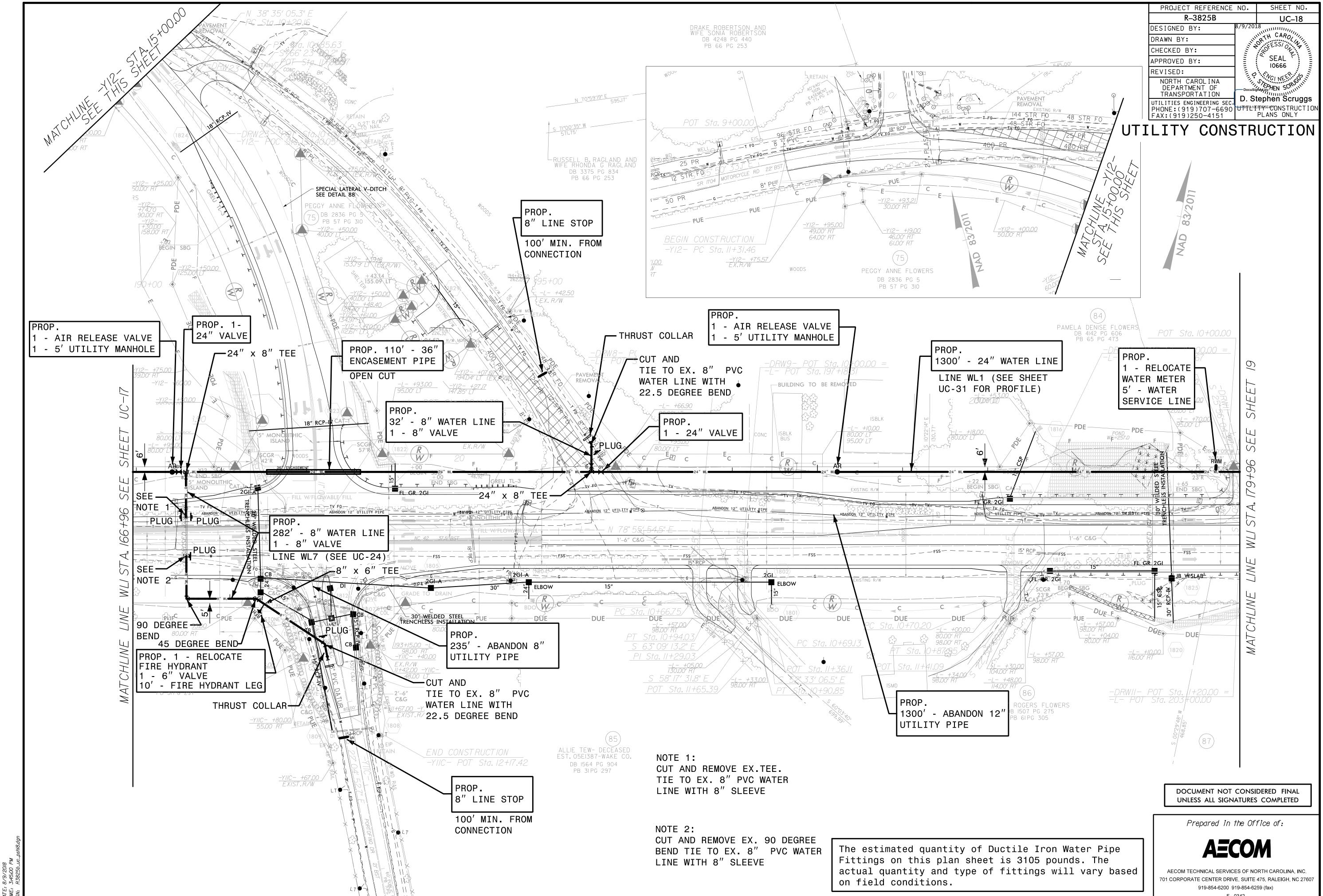
UTILITY CONSTRUCTION





LINE WL1A (SEE SHEET UC-26 FOR PROFILE) DB 1829 PG 784





F - 0342

